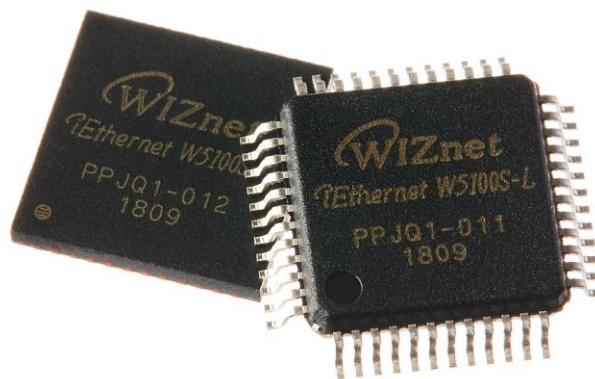


SOCKET-less Command Application Note

Version 1.0.0



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1 Introduction

W5100S transmits ARP and PING Request Packet through SOCKET-less Commands without SOCKET OPEN. User configures Information for Request Packet through Registers. If ARP and PING Reply Packet are received within Retransmission Time configured by SLRCR and SLRTR, ARP and PING Interrupt are occurred. If there is no Reply Packet within Retransmission Time, TIMEOUT Interrupt is occurred. Next SOCKET-less Command must not be set before Interrupt occurred against of previous Command.

2 ARP Command

HOST configures ARP SOCKET-less Command through SLCR to transmit ARP Request Packet. Before configuring Command, SLRCR, SLRTR, and SLPIPR must be set.

If there is no ARP Reply against of ARP Request within Retransmission Time set by SLRCR or SLRTR, TIMEOUT Interrupt is occurred.

If ARP Reply is received within Retransmission Time, ARP Interrupt is occurred and MAC Address in ARP Reply is stored in SLPHAR register.

SLIR indicates the corresponding Interrupt to the occurred Event. And INTn is asserted to Low if the corresponding Bit in SLIMR is set to '1'.

2.1 ARP Command Implementation

Figure 1 shows Operation Flow of ARP SOCKET-less Commands.

ARP Request Packet is transmitted by implementing Code according to flow in Figure 1 or by using ARP Library Code.

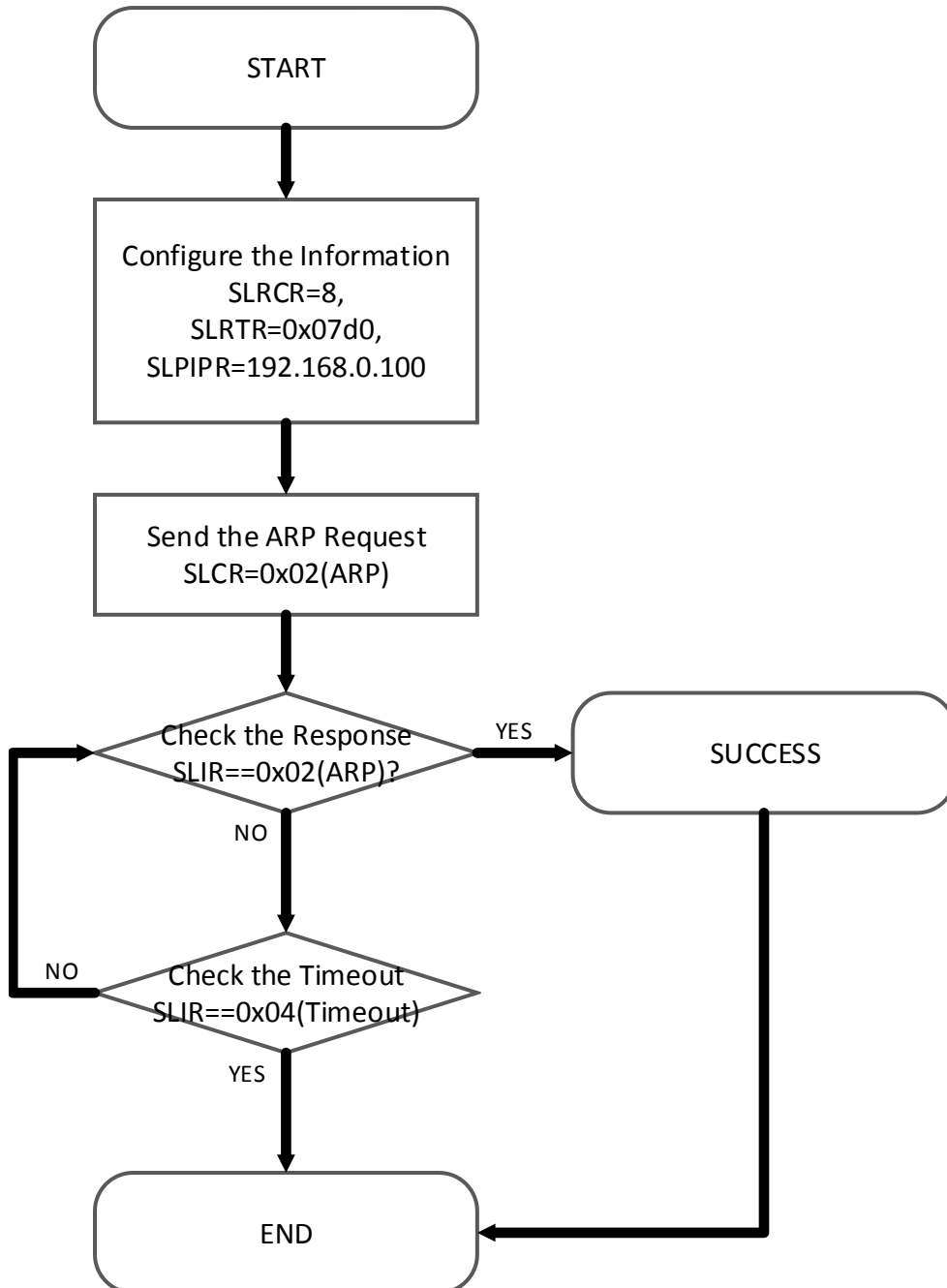


Figure 1. SOCKET-less Command ARP Operation Flow

2.1.1 Configure Information

Configure required information before sending ARP Request. Configure SOCKET-less Command Retransmission Count, SOCKET-less Command Retransmission Time, and SOCKET-less Command Peer IP Address.

2.1.2 Send ARP Request

Configure SOCKET-less ARP Command to send ARP Request Packet.

2.1.3 Check Response

Check that ARP Response Packet was received through Interrupt Register.

2.1.4 Check Timeout

Check that timeout occurred through Interrupt Register.

3 PING Command

User configures PING SOCKET-less command through SLCR register to transmit PING Request Packet. Before configuring command, set SLRCR, SLRTR, PINGSEQR, PINGIDR, and SLPIPR registers.

W5100S gets MAC Address by transmitting ARP Request Packet to transmit PING Request Packet. If there is no ARP Reply within Retransmission Time configured by SLRCR or SLRTR, TIMEOUT Interrupt is occurred.

If ARP Reply is received, Peer MAC Address is stored in SLPHAR. And W5100S transmits a PING Request with MAC Address in SLPHAR.

The same as ARP, If there is no PING Reply within Retransmission Time configured by SLRCR or SLRTR, TIMEOUT Interrupt is occurred.

If PING Reply is received and the Sequence Number and Identifier is the same as PING Request's, PING Interrupt is occurred.

SLIR indicates the corresponding Interrupt to the occurred Event. And INTn is asserted to Low if the corresponding Bit in SLIMR is set to '1'.

Figure 2 shows PING Request Packet that W5100S transmitted. PING Identifier and PING Sequence are transmitted as below.

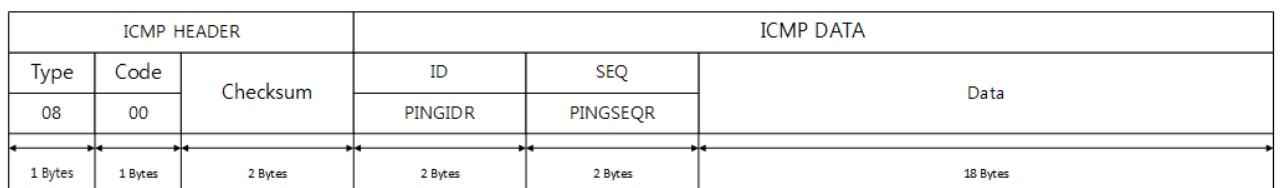


Figure 2. PING Data in SOCKET-less Command

3.1 PING Command Implementation

Figure 3 shows Operation Flow of SOCKET-less Commands.

PING Request Packet is transmitted by implementing code according to flow in Figure 3 or by using PING library code.

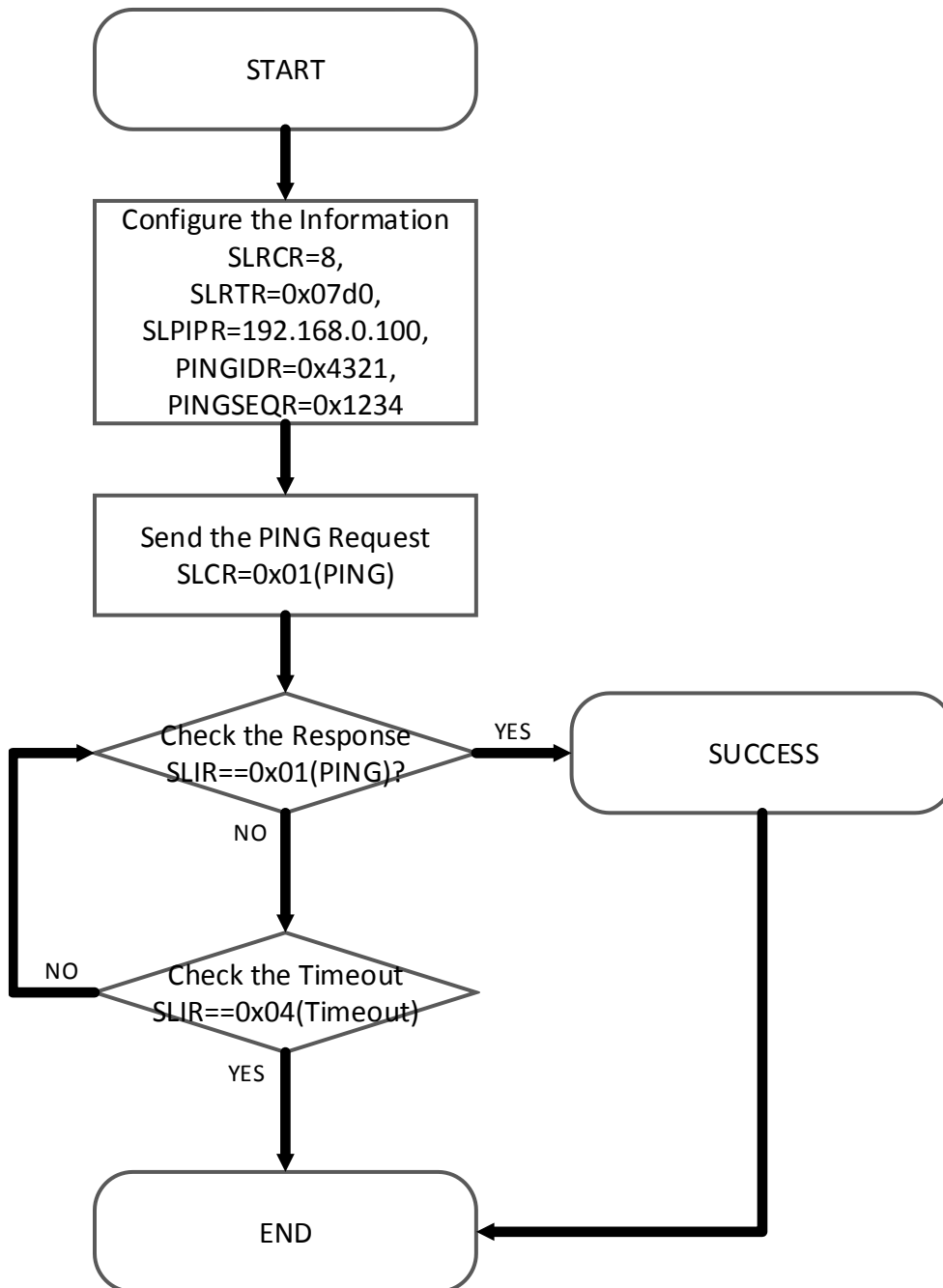


Figure 3. SOCKET-less Command PING Operation Flow

3.1.1 Configure Information

Configure Information is required before sending PING Request. Configure SOCKET-less Command Retransmission Count, SOCKET-less Command Retransmission Time, SOCKET-less Command Peer IP Address, PING Identifier, and PING Sequence Number.

3.1.2 Send PING Request

Configure SOCKET-less PING command to send PING request packet.

3.1.3 Check Response

Check PING Reply received through Interrupt Register.

3.1.4 Check Timeout

Check that timeout occurred through Interrupt Register.

4 Document History Information

Version	Date	Descriptions
Ver. 1.0.0	May, 2018	Release

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